AMERICAN MUSEUM NOVITATES

Number 781 — Published by THE AMERICAN MUSEUM OF NATURAL HISTORY New York City — Feb. 18, 1935

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TWO NEW SPECIES OF *GYMNOTUS*

BY F. R. LAMONTE

We have recently received from the tropical fish tanks in charge of Mr. C. W. Coates at the New York Aquarium an apparently undescribed *Gymnotus*-like fish. Five others like it are still alive in the tanks. In comparing this fish with American Museum material, I have also come across a new species from Guatemala.

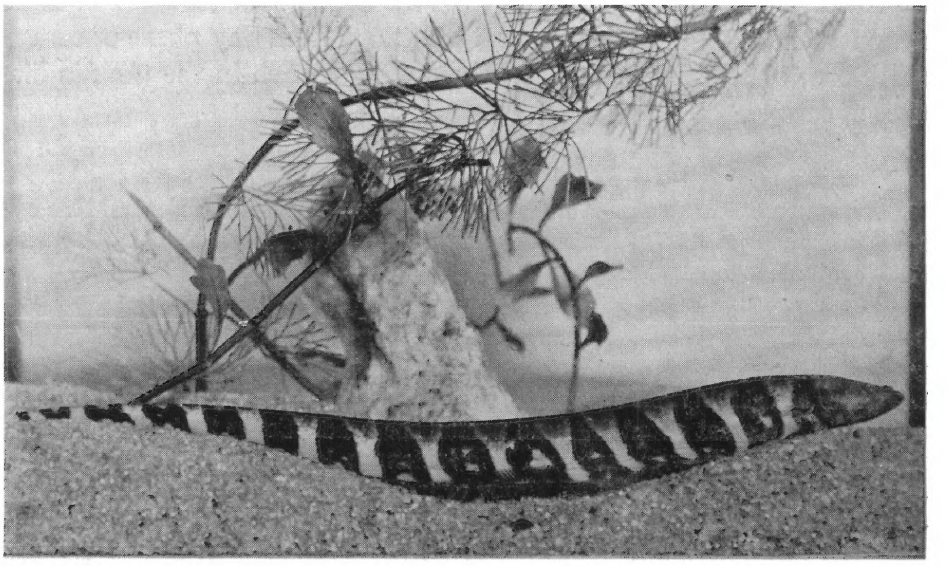

Fig. 1. *Gymnotus coatesi*, from life.
Courtesy New York Aquarium.

Gymnotus coatesi, new species

DESCRIPTION OF TYPE.—Number 12624, American Museum of Natural History; collected 1934, Amazon River, Brazil, by Carl Griem.

Total length, 180 mm.; depth in this length, 11.9; head, 10. Anal rays, 215. Snout in head, 3.7; interorbital, 3; eye, about 15; pectorals, 2.4. Width of head in greatest body depth, 1.6; depth of head, at base of occipital process, in depth of body, 1.8. Anus an orbit in front of vertical from the origin of pectoral. Origin of anal fin on a vertical from a point about 0.9 the head behind the head. Scales large, regularly arranged. Lateral line complete, paralleling the main axis of the body. Teeth conical, fairly large, in three rows in the front of both jaws, and a single row on sides of

mandible. No fontanels; lower jaw much the longer and heavier. Anal fin not quite to end of caudal process. Body cylindrical, dorsal profile almost straight; ventral profile straight to the origin of the anal, then convex, tapering to the tail. Snout blunt.

Color (in life and in preservative): ground color yellowish white, crossed by broad black bands which diminish in width toward the tail. Head from opercle forward entirely black. Fourteen black bands, the last (the tip of tail) and the three preceding it entirely black; the others each with a round white spot on the lower body edge, and the eighth and ninth band with a similar spot on the upper edge also. A circle of white surrounds a round black spot in the center of the side of the first band. In between the bands, running down from the dorsal ridge, are irregular triangles of lightish brown. Fin rays grayish with minute black punctulations on the membrane on either side; the remainder of the membrane white.

As the comparative tables given below demonstrate, this fish is much more slender and cylindrical in shape than *Gymnotus carapo;* the lower jaw protrudes farther beyond the upper; the teeth are in three rows instead of one; the color pattern differs from any phase of *carapo* described, or seen by me. The behavior of the fish in the tank is like that of *carapo.*

Gymnotus cylindricus, new species

DESCRIPTION OF TYPE.—Number 1358, American Museum of Natural History; collected in a brook east of Los Amates, Rio Motagua basin, Guatemala, February 17, 1905, by Newton Miller.[1]

Total length, 182 mm.; depth in this length, 9.4; head, 9.4. Anal rays, 250. Snout in head, 3.8; interorbital, 2.8; eye, about 13; pectorals, 2.5. Width of head in greatest body depth, 1.6; depth of head at base of occipital process, in depth of body, 1.4. Anus an orbit in front of vertical from origin of pectoral. Origin of anal fin on a vertical from a point about 0.9 head behind the head. Scales fairly large. Teeth conical, in a single row in each jaw. No fontanels; lower jaw slightly the longer. Anal fin to end of caudal process. Body cylindrical; dorsal profile almost straight; ventral profile convex. Snout flat and blunt.

Color in preservative: yellowish brown, with indications of narrow diagonal crossbars. Head light; fins light, without traces of any markings.

Comparative measurements (in mm.). Specimens of comparable length

	G. carapo	*G. coatesi*	*G. cylindricus*
Total length	182	180	187
Greatest body depth	24	16	20
Depth at pectoral	16.5	10	14
Depth 3/4 distance to tail tip	15	6	13
Head width across gills	15	10	13
Head width across eyes	12	7	11

[1]Miller, N. 1907, 'The Fishes of the Motagua River, Guatemala.' Bull. Amer. Mus. Nat. Hist., XXIII, p. 103.

	G. carapo	*G. coatesi*	*G. cylindricus*
Mouth gape	10	5	9
Interorbital width	8	6	7
Head length	25.1	17.5	20

Comparative measurements (ratios)

Head in length	6.9	10	9.4
Ellis:[1]	7.25–11		
Depth in length	7.9	11.9	9.4
Ellis:	8.5–14		
Anal Rays	254	215	250
Snout in head	3.1	3.7	3.8
Ellis:	2.5–3		
Interorbital in head	3.2	3	2.8
Ellis:	2.25–3		
Eye			
in snout	4	4.5	3.5
in interorbital	6.1	5	6
Ellis:	4.25–6		
in head	12	about 15	about 13
Pectorals in head	2.7	2.4	2.5
Width of head in body depth	1.8	1.6	1.6
Depth of head in body depth	1.9	1.8	1.4
Ellis:	1.3-1.8		
Teeth	conical, 1 row	conical, 3 rows	conical, 3 rows

[1]Ellis, M. M. 1913, 'The gymnotid eels of tropical America.' Mem. Carnegie Mus., VI, No. 3, p. 117.